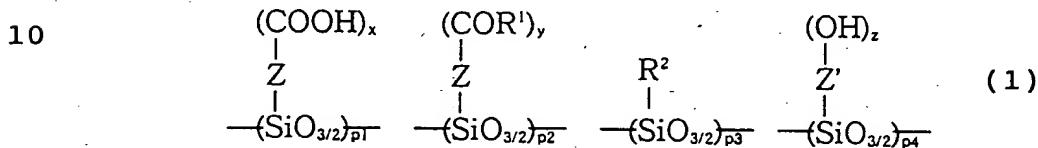


ABSTRACT

The invention provides a high molecular weight silicone compound comprising recurring units of formula 5 (1) and having a weight average molecular weight of 1,000-50,000. Some or all of the hydrogen atoms of carboxyl groups or carboxyl and hydroxyl groups in the silicone compound may be replaced by acid labile groups.



15 Z is a di- to hexavalent, non-aromatic, monocyclic or polycyclic hydrocarbon or bridged cyclic hydrocarbon group; Z' is a di- to hexavalent, normal or branched hydrocarbon group or non-aromatic, monocyclic or polycyclic hydrocarbon or bridged cyclic hydrocarbon group; x, y and z are integers of 1-5 corresponding to the 20 valence of Z and Z'; R¹ is -OCHR-R'-OH or -NHCHR-R'-OH; R² is alkyl or alkenyl or a monovalent, non-aromatic, polycyclic hydrocarbon or bridged cyclic hydrocarbon group; p1, p2, p3 and p4 are 0 or positive numbers. A resist composition comprising the high molecular weight 25 silicone compound as a base resin is sensitive to actinic radiation and has a high sensitivity and resolution so that it is suitable for microfabrication with electron beams or deep UV. Since the composition has low absorption at the exposure wavelength of an ArF or KrF 30 excimer laser, a finely defined pattern having walls perpendicular to the substrate can be readily formed.

DEPARTMENT OF DEFENSE